



TRANSPORTATION CABINET

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Governor

Frankfort, Kentucky 40622
www.kentucky.gov

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Secretary

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Commissioner of Highways

April 12, 2007

Roadside Safety Hardware Manufacturers:

The Kentucky Department of Highways has decided to institute a Roadside Safety Hardware Proprietary Products Selection Process. The purpose of this Selection Process is to select the most qualified proprietary products to use as roadside safety hardware on Kentucky's roads.

This letter is to serve as the "Notification to Manufacturers." Attached is a copy of the *Roadside Safety Hardware - Proprietary Products Selection Process* document, which describes this process in more detail. Also attached is the list of *Technical Specifications and Criteria of Barrier End Treatments and Crash Cushions Used in Kentucky*. The Department plans to select two proprietary providers for each of the different roadside safety hardware on the attached list. This list documents two types of guardrail end treatments and eight types of crash cushions.

To be considered for selection, the manufacturer's product must meet the Cabinet's designated technical specifications and criteria. If interested, manufacturers are to send responses to this announcement to the Division of Highway Design's Standard Drawings Section (see the address on the next page). These responses will detail the manufacturer's product and request that their product be approved as a viable alternative to the roadside safety hardware being selected. Since there are multiple product categories, the manufacturer will specify which category their product may be qualified to fill.

The Branch Manager over the Standard Drawings Section, or designee, will certify that the manufacturer's proposed product agrees with the designated technical specifications. If the product does fit the intended purpose, it is prequalified for the selection process.

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The Division of Highway Design will notify the manufacturers about the status of their proposed product and whether or not their product will be considered during the selection process. Further instructions will be given to the manufacturers whose product is prequalified for the selection process. Those instructions will give further details about the selection process, including evaluation factors and their relative weights, etc.

Manufacturers must have their responses to this announcement in by May 4, 2007. The current plan and goal is to have selection complete by June 30, 2007.

If you have any questions or comments about this process, please email Jeff Jasper at jeff.jasper@ky.gov. **We will not answer questions via phone; please document and email all comments and questions.**

Sincerely,




Marcelyn Mathews, P.E.
State Highway Engineer

Please mail responses to the following:

The Division of Highway Design
Attention: Jeff Jasper, P.E.
200 Mero Street, E5-11-02
Frankfort, KY 40622

Be sure that the response clearly describes your product and specifies which category your product may be qualified to fill. Multiple products may be detailed on the same response. Please be sure to include a contact name, in case questions arise. **Finally, remember that responses must be to our office by May 4, 2007.**

	Roadside Safety Hardware - Proprietary Products Selection Process
	<i>Subject</i> Definition of the Process

PURPOSE

The purpose of the Roadside Safety Hardware Proprietary Products Selection Process is to select the most-qualified proprietary products to use as roadside safety hardware on Kentucky's roads.

INTRODUCTION

From a programmatic standpoint, the Department has a history of choosing two providers of proprietary products for roadside safety hardware. Kentucky's standard crash cushions and guardrail end treatments are limited to two proprietary devices each (except where there is a generic or no equal alternative.) The Department limits these devices to two vendor products for the reasons described below:

1. To provide consistency of construction installation and inspection – These devices must be installed correctly to function properly. Giving only two options leads to better, more efficient installations and quality assurance.
2. To provide common products and inventories for maintenance purposes – Consistency of products also helps maintenance in the future repair processes and logistics. Most importantly, due to scarce financial and labor resources, it is desirable to stock a limited amount of repair parts and train the workers on a smaller number of products.

The Department has been allowed to choose only two providers of proprietary products because of the "synchronization" clause found in 23 CFR 635.411(a)(2). It is essential that the Department provide synchronization of our highway facilities for the reasons stated above. Also, by choosing two providers of proprietary products, there is competitive bidding between the two products.

The Department has made the decision to institute a Roadside Safety Hardware Proprietary Products Selection Process. This process will periodically be used to select the most-qualified roadside safety hardware products. This allows the Department to have an open selection in order to choose two proprietary providers to supply the different roadside safety hardware used by Kentucky. This selection process will be carried out in time for the release of a new "Standard Specifications for Road and Bridge Construction" and the revision or

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reprint of the "Standard Drawings." (This is generally every four years.) Any questions concerning this process should be addressed to Division of Highway Design, Standard Drawings Section.

CODE OF ETHICS

All Cabinet personnel are to subscribe to the following:

- Consider the interests of the Commonwealth of Kentucky and the Transportation Cabinet first when selecting proprietary products.
- Seek to obtain the maximum value for each dollar spent on proprietary products
- Strive for honesty and truth in the selection process.
- Denounce all forms of bribery or favors.

All persons involved in the Proprietary Products Selection Process shall scrupulously comply with both the letter and the spirit of Kentucky Revised Statutes (KRS) Chapter 11A, the "Executive Branch Code of Ethics", pertaining to standards of ethical conduct in the Executive Branch; and KRS 45A.340, "Conflicts of Interest of Public Officers and Employees".

PREQUALIFICATION OF MANUFACTURER'S PRODUCT

To be considered for selection, the manufacturer's product must meet the Cabinet's designated technical specifications and criteria. The Division of Highway Design, Standard Drawings Section will pre-qualify products and ensure that the product will fit its intended purpose. Once a product is prequalified, the manufacturer will send proposals to be used during the selection process.

Notification to Manufacturers: The Division of Highway Design, Standard Drawings Section is to prepare a bulletin announcing the Proprietary Products Selection Process to the roadside safety hardware industry. The bulletin is to include:

- A basic explanation of the Proprietary Products Selection Process
- A general description, technical specification, and/or drawing of the roadside safety hardware(s) being selected
- A discussion of procedures to follow for submission of a response for the selection process
- Evaluation factors and their relative weights
- A timetable for the selection committee's meetings for the process
- Other materials that may assist manufacturers in responding to the announcement deadline for filing responses

Multiple products may be announced on the same bulletin. Two providers will be selected to provide roadside safety hardware for each category announced in the bulletin.

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Distribution of Bulletin: The bulletin is to be posted on Standard Drawings web page. Manufacturers listed on the Federal Highway Administration (FHWA) Safety website for roadside hardware will be contacted via certified mail. (The FHWA Safety website contains information on all types of roadside hardware that have been formally accepted by FHWA for use on the National Highway System.)

Responses to Announcements: Manufacturers are to send their responses to the announcement to the Division of Highway Design, Standard Drawings Section. These responses will detail the manufacturer's product and request that their product be approved as a viable alternative to the roadside safety hardware being selected. If multiple product categories are announced, the manufacturer will specify which category their product may be qualified to fill.

Certification of Responses to Announcements and Request for Proposals: The Branch Manager over the Standard Drawings Section, or designee, will certify that the manufacturer's proposed product agrees with the designated technical specifications. If the product does fit the intended purpose, it is prequalified for the selection process.

The Division of Highway Design will notify the manufacturers about the status of their proposed product and whether or not their product will be considered during the selection process. If their product is prequalified, manufacturers will send proposals to be used during the selection process. (Manufacturers will not be considered for selection if they miss the submittal deadline, respond with less proposals copies than requested, or provide incomplete information on the proposals.)

Confidentiality of the List of Responses: The list of responses to the announcement is to be kept confidential until the selection has been made.

ROADSIDE SAFETY HARDWARE - PROPRIETARY PRODUCTS SELECTION PROCESS

PROPRIETARY PRODUCTS SELECTION COMMITTEE

A Proprietary Products Selection Committee is to be created to review proposals about the manufacturer's proposed product. The committee will be responsible for the selection of proprietary products to use as roadside safety hardware on Kentucky's roads.

Membership: The seven member committee is to consist of the following persons:

- The State Highway Engineer.
- Two Professional Engineers or Engineering Technologists from the Division of Maintenance.
- Two Professional Engineers or Engineering Technologists from the Division of Construction.
- Two Professional Engineer or Engineering Technologist from the Division of Highway Design.

The directors of the different divisions are to appoint one merit professional engineer or engineering technologist from both his/her division and the same functional area in the district. The directors should work together to assure that committee members from the districts come from different districts. The director should appoint people who have familiarity and experience related to the product being selected. If the director is a merit employee, the director may appoint herself or himself to the committee.

Qualifications for Committee Members: All Proprietary Products Selection Committee members are to meet the following requirements:

- All committee members are to have experience that qualifies them to serve on the committee.
- No employee of the Transportation Cabinet is required to involuntarily serve as a member of the committee.
- A person is not to serve on a selection committee if that person, his or her spouse, parent, sibling, or child (1) is employed by or (2) owns stock in or works for a manufacturer contending for selection.

COMMITTEE MEETINGS

The meeting of the Proprietary Products Selection Committee is to be called by the Division of Highway Design. Committee members will previously have been provided with the following:

- Copies of the Manufacturer's responses
- The announcement of the request for proposal
- A Certification of Confidentiality (Exhibit 01) requiring all committee members' signatures
- Other information that may be pertinent to the selection of the best qualified product.

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The agenda for the committee meeting will be the following:

- Elect a chairperson. (The State Highway Engineer should not be the chair since the position is non merit.)
- Discuss the eligible product proposals. (See "REVIEW OF PROPOSALS" below.)
- Select two products for each category as the most-qualified proprietary products.

Policy for committee meetings are as follows:

- All motions and decisions require a simple affirmative vote of all members present for passage.
- A quorum for the meeting is to be six of the seven voting members. Voting by proxy is not allowed.
- The selection committee is to meet to discuss and evaluate all eligible responses to the advertisement.
- Minutes of all committee meetings are to be taken, and the public is to be permitted access to these minutes after the selection has been made and the selected manufacturers have been notified. The Division of Highway Design is responsible for assuring that the minutes are recorded and properly distributed.

REVIEW OF PROPOSALS

It is the intent that each prequalified manufacturer's product be given equal opportunity to be selected by the committee and that all manufacturers submitting proper responses be given fair and impartial consideration. The committee is to use the evaluation factors and relative weights indicated in the announcement for each product to screen all proposals received in proper form. The evaluation factors and weights may vary by product; therefore, the announcement for that product is to indicate what they are.

Before the selection committee meeting to determine and select the two most-qualified proprietary products, each voting committee member is to review all proposals. Using the weighted evaluation factors that appeared in the advertisement, each committee member is to preliminarily evaluate and numerically rate each product. These evaluations and ratings are to be considered preliminary and confidential working documents and are not to be available to the public.

At the selection meeting, the members of the committee are to discuss the proposals, their evaluations and ratings. The committee will determine the top two products and provide two alternatives if possible. (The alternatives would be the third and fourth place products during the final vote.)

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The committee review procedure is as follows:

1. Each committee member is to identify the three products he or she has ranked as the most-qualified. Every member's choices are to be placed on a short list. Committee members are to have the opportunity to provide insight into why they believe each product should or should not be selected.
2. After review and discussion of all products on the short list with regard to their qualifications and the quality of the proposals, the committee may, by a consensus of the members, eliminate products from further consideration.
3. After consideration of the evaluation factors, the committee is to vote by secret ballot to individually rank each of the remaining products.
4. The committee is then to review and discuss the new compilation of short-listed products identified by the secret ballot. The selection committee may, by consensus, eliminate any products from further consideration.
5. If at the end of this process it is not clear which two products are the top two, the selection committee is to repeat the above process until the top two products are clearly determined.
6. If the selection committee elects, it may interview any of the responding manufacturers to aid in its determination of the most-qualified products.
7. The committee is to compile a listing of the top four products selected for each category with the products ranked first through fourth. The top two products will be considered the most-qualified proprietary products for each category of roadside safety hardware.
8. The committee will turn over the ranking list to the Division of Highway Design, Standard Drawings Section.

Selection committee members and their administrative support staff are prohibited from discussing the responses or ranking of products outside the committee meetings except for answering general procedural questions. Selection committee members are to complete and sign the "Ex Parte" Disclosure (Exhibit 02), which discloses to the other selection committee members ex parte communication between a committee member and a manufacturer responding to the bulletin for that particular product.

NOTIFICATION OF SELECTED PRODUCT

The Division of Highway Design, Standard Drawings Section is to notify the two top ranked manufacturers of the selection of their products. The division is to also send to all manufacturers that responded to the announcement in a timely manner a letter advising them of the two proprietary products selected.

TRAINING ON THE PRODUCT

The manufacturers for the selected roadside safety hardware must be willing to provide training on their product. The Department will want to certify the appropriate personnel on the installation and maintenance of the product. The

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training will be given free-of-charge to Department personnel and Contractors alike. Failure by the manufacturer to provide training will result in their product being removed as a viable selection, and another product will be selected for use.

THE PROCUREMENT PROCESS

The procurement process for these products will operate just as they do now for the proprietary products. For new construction, the Contractors responsible for furnishing and installing the roadside safety hardware will choose one of the two products listed on the Standard Drawings and Specifications (Special Provisions). The manufacturers of the products will be responsible for marketing, pricing, and selling their product(s) to the Contractors. Maintenance personnel will choose products and parts of the price contracts.

The appropriate Standard Drawings and Specifications (Special Provisions) will be updated to reflect the two selected products. These updates will be used to modify the necessary purchasing processes so that these products will be used in new construction and maintenance.

KENTUCKY TRANSPORTATION CABINET

CERTIFICATION OF CONFIDENTIALITY

Roadside Safety Hardware – Proprietary Products Selection Process 2007

I understand that I am not to discuss any specifics of the *Roadside Safety Hardware – Proprietary Products Selection Process* with any Roadside Safety Hardware Manufacturer from the time of the “Notification to Manufacturers” until such time that the Division of Highway Design can send out the “Notification of Selected Product”, with the exception of if the selection committee elects to interview any of the responding manufacturers to aid in its determination of the most-qualified products.

Signature

Date

NOTE: This form must be returned to the Selection Committee Secretary at the Selection Committee meeting for the above selection process for inclusion in the official file.

KENTUCKY TRANSPORTATION CABINET

"EX PARTE" DISCLOSURE

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I certify that I have had no contact concerning the above selection process with any Roadside Safety Hardware Manufacturer from the time of the "Notification to Manufacturers" until the time of this selection committee meeting.

Signature

Date

If you are aware of any variation from the above statements, you shall report it immediately to the Secretary of the Committee or other appropriate authority within the Transportation Cabinet.

As a member of the Selection Committee:

I, _____ certify that the responding Roadside Safety Hardware Manufacturers were given equal opportunity to be selected.

Signature

Date

NOTE: You must sign and return this form to the Secretary of the Committee so they may be disclosed to the other committee members at this selection committee meeting.

Technical Specifications and Criteria of Barrier End Treatments and Crash Cushions Used in Kentucky

The types of devices listed below for use by the Kentucky Transportation Cabinet shall be NCHRP 350 Test Level 3 approved. The definition of terms listed below will be used to match device type to the appropriate items. These devices will be required to stop or redirect an impacting vehicle when hit end-on. They must also be capable of safely redirecting a vehicle that impacts the side of the device, both at mid-length and near the nose.

Two Types of Devices:

Barrier End Treatment:

This device is normally used at the end of a roadside barrier where traffic passes on one side of the barrier and in one direction only. These will connect to standard guardrail or a barrier wall. A crashworthy end treatment is considered essential if a barrier terminates within the clear zone or is located in an area where it is likely to be struck by an errant motorist. The area behind these barrier end treatments shall be relatively traversable and free of significant fixed objects unless otherwise specified by AASHTO Roadside Design Guide or the Kentucky Standard Drawings.

Crash Cushion:

This device is normally used to shield the end of a median barrier or a fixed object. These are attached to standard guardrail, barrier wall or other concrete back ups as specified by the Kentucky Transportation Cabinet or as recommended by the manufacturer. A crash cushion may also be used to shield a fixed object on either side of a roadway if a designer decides that a crash cushion is more cost effective than a barrier end treatment. Crash Cushions should leave little to no debris after a hit. These shall work on the kinetic energy principle.

Definition (Attributes of the Devices):

Energy Absorbing Devices:

This type of device operates on the principle of absorbing the energy of the vehicle through the use of energy absorbing rip plates, bays, modules filled with/consisting of crushable or deformable materials or hydraulic energy absorbers. Some energy is also absorbed by the impacting vehicle as the front end of the vehicle is crushed on impact. Energy absorbing attenuators may require rigid back-up support or connection to another barrier system to contain the forces created by the deformation of the device.

Gating Device:

A device designed to allow controlled penetration of a vehicle when impacted upstream of the beginning of the length of need (LON). Note there is some distance between the end of a gating device and the beginning of the LON of the device.

Flared Terminal:

This type of device flares the end of the terminal away from the travel lane and normal line of guardrail. It is designed to allow a vehicle impacting on or near the end to pass through the device.

Permanent Feature (Device):

A feature with an anticipated long duration of service, as opposed to those used in a work or construction zone having a relatively short duration of service.

Redirective Properties:

A vehicle is redirected when it safely stays on the same side of the device it strikes. NCHRP 350 provides further criteria to define safe redirection.

Fully Redirective Devices

A fully redirective device will safely redirect a vehicle that impacts at any location along the face of the device.

Partially Redirective Devices

A partially redirective device will safely redirect a vehicle that impacts downstream of a given length of need point along the length of the device. This type of device will allow a vehicle impacting between the length of need point and the free end of the impact attenuator to pass through to the area behind the device.

Non-Redirective Devices

A non-redirective device will either capture an impacting vehicle or allow it to pass through when hit along the face of the device.

Self Restoring:

This type of device retains or restores very close to its original shape and condition after a hit, and requires little to no maintenance between hits. These devices are typically used for very high ADT areas with a high crash history.

Severe Use:

This type of device shall require a low cost to maintain and shall take a short amount of time to get this device back in service. This terminal shall be placed in areas with a high crash history and a high ADT area.

Temporary Feature (Device):

A feature used in a work, construction, or maintenance zone. Its duration of use is normally relatively short, usually one year or less.

Terminal:

A device designed to make crashworthy & anchor the end of a longitudinal barrier. A terminal may function by:

- (a) decelerating a vehicle to a safe stop within a relatively short distance,
- (b) permitting controlled penetration of the vehicle behind the device,
- (c) containing and redirecting the vehicle, or
- (d) a combination of a, b, and c.

KYTC ROADSIDE SAFETY HARDWARE:

Guardrail End Treatment Type 1:

This barrier end treatment is a straight system that may be placed parallel to the travel lane. This device shall be a permanent feature, energy absorbing device and partially redirective.

Guardrail End Treatment Type 4A:

This barrier end treatment is a straight line flared system. This device shall be a permanent feature, gating device that is partially redirective.

Crash Cushion Type VI Class A and A-T:

This crash cushion shall be a permanent feature, fully redirectional and energy absorbing. This class of crash cushion's purpose is to be placed in low ADT/crash history areas. These crash cushions shall be low initial cost and possibly disposable after a hit. This crash cushion may also be utilized for temporary use and construction zones (Class A-T)

Crash Cushion Type VI Class B and B-T:

This crash cushion shall be a permanent feature, fully redirectional and energy absorbing. This class of crash cushion's purpose is to be used in areas where crash history is not known to be severe. They shall be easily and quickly serviced after a hit. The parts for repair of these crash cushions shall be readily available and not require any type of manufacturer refurbishment before being fully operational within a reasonable time after a hit. This crash cushion may also be utilized for temporary use and construction zones (Class B-T)

Crash Cushion Type VI Class C and C-T:

This crash cushion shall be a permanent feature, fully redirectional and energy absorbing. This class of crash cushion shall require minimal replacement of parts if any after a hit and quickly be repaired and placed back into service. This unit is considered a severe use crash cushion. This crash cushion may also be utilized for temporary use and construction zones (Class C-T)

Crash Cushion Type VI Class D and D-T:

This crash cushion shall be a permanent feature, fully redirectional and energy absorbing. This class of crash cushion's purpose is to be used in areas that have a high crash history and shall be considered "self restoring" units. These units shall require little to no repairs after a hit and should restore themselves close to their original shape and purpose after a hit. This crash cushion may also be utilized for temporary use and construction zones (Class D-T)

Crash Cushion Type VII Class B:

This crash cushion shall have the same features as the Crash Cushion Type VI B, with the exception of being designed to protect an area such as a wide gore. (70 ½" ~90 ½")

Crash Cushion Type VII Class C:

This crash cushion shall have the same features as the Crash Cushion Type VI C, with the exception of being designed to protect an area such as a wide gore. (70 ½" ~90 ½")

Crash Cushion Type VII Class D:

This crash cushion shall have the same features as the Crash Cushion Type VI D, with the exception of being designed to protect an area such as a wide gore. (70 ½" ~90 ½")

Crash Cushion Type IX AND IX A:

This crash cushion shall be a permanent feature, partially redirectional and energy absorbing. This class of crash cushion's purpose is to be used in areas where a paved pad is not required. The parts for repair of these crash cushions shall be readily available and not require any type of manufacturer refurbishment before being fully operational within a reasonable time after a hit. This crash cushion can attach to either standard barrier wall or guardrail.